

**Lawrence Livermore National Laboratory**

**LLNL Evaluations for ENDF/B-VII.1  
mini-CSEWG 2010**



Neil Summers

# CSEWG Actions

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☒ 248:  $^{27}\text{Al}$

- LLNL eval. dropped, reverted to ENDF/B-VII.0

☐ 258:  $^{74,75}\text{As}$

- $^{75}\text{As}$  reverted to ENDF/B-VII.0
- $^{74}\text{As}$  new LLNL evaluation missing (fake) resonances

☐ 278:  $^{240}\text{Am}$ , LLNL evaluation adopted

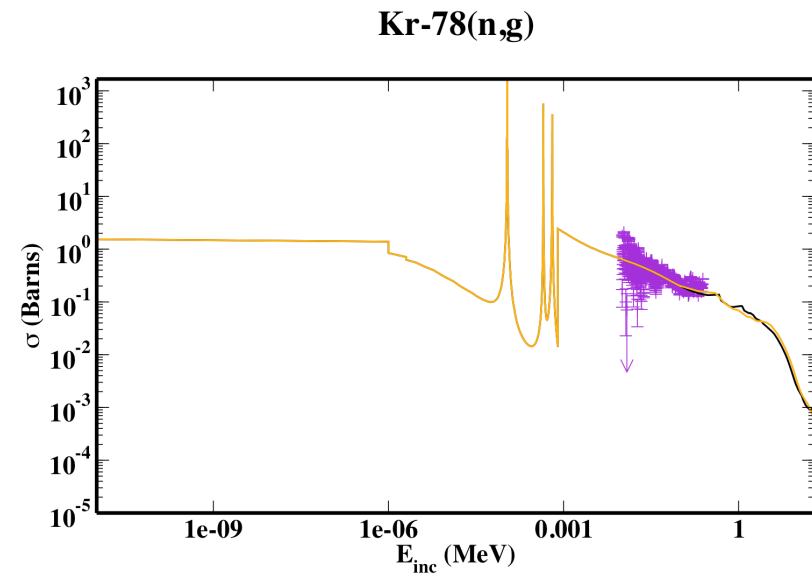
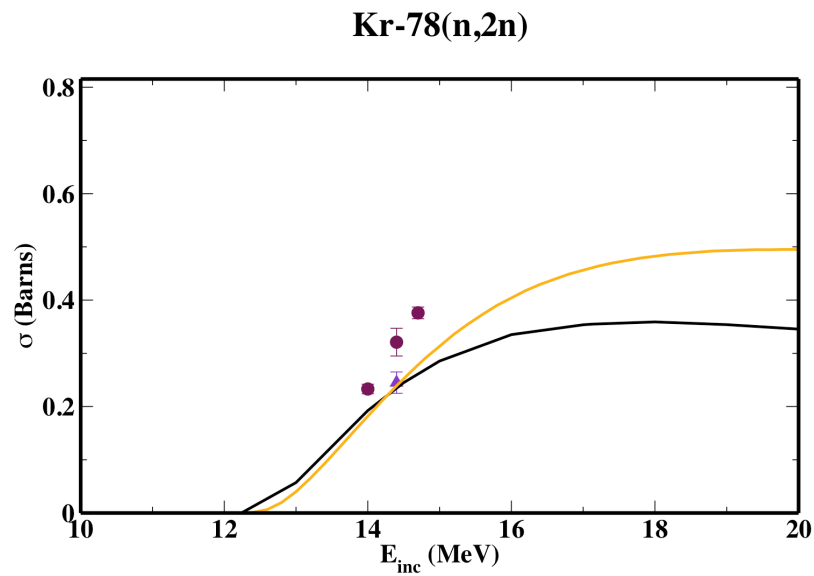
- LLNL to replace resonances with JENDL/AC

☒ 273:  $^{237}\text{U}$ , LLNL evaluation adopted

☐ 280: Cm Dave Brown to review KAERI evaluations

- KAERI evaluations not complete [~fall 2010]

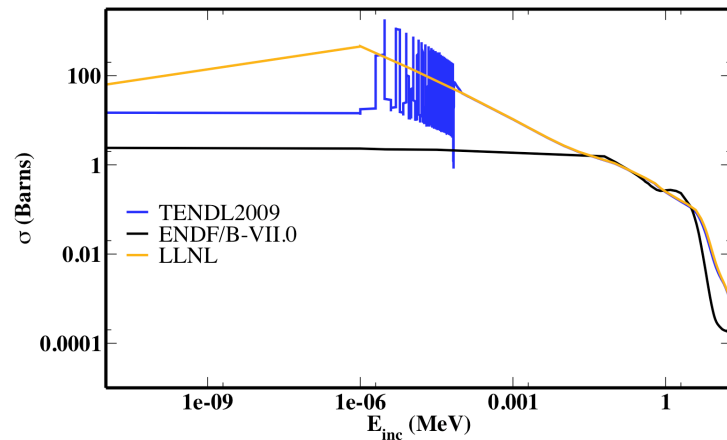
## ✓ 259: $^{78}\text{Kr}$ submitted



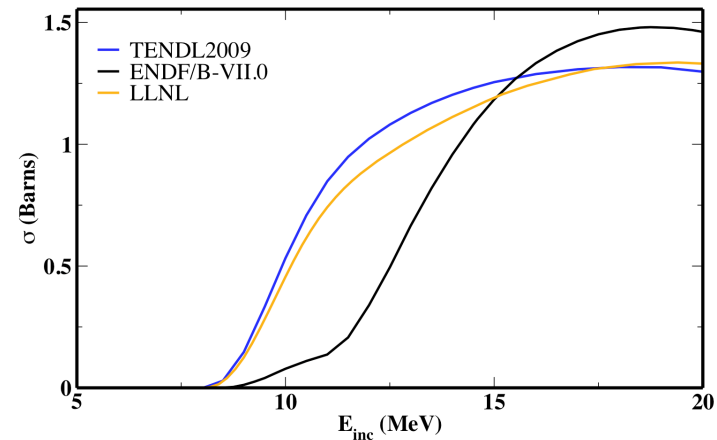
- Resonances taken from ENDF/B-VII.0
- (n, $\gamma$ ) is unchanged from WPEC-23

## □ 262: $^{123,124}\text{Xe}$ submitted (left open)

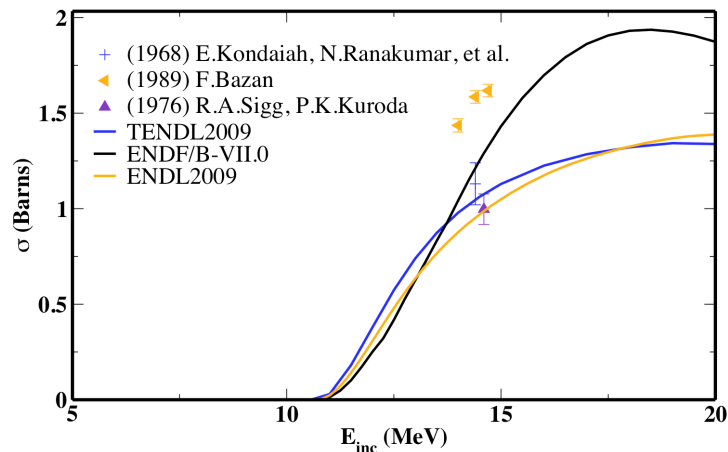
$\text{Xe-123}(n,g)$



$\text{Xe-123}(n,2n)$

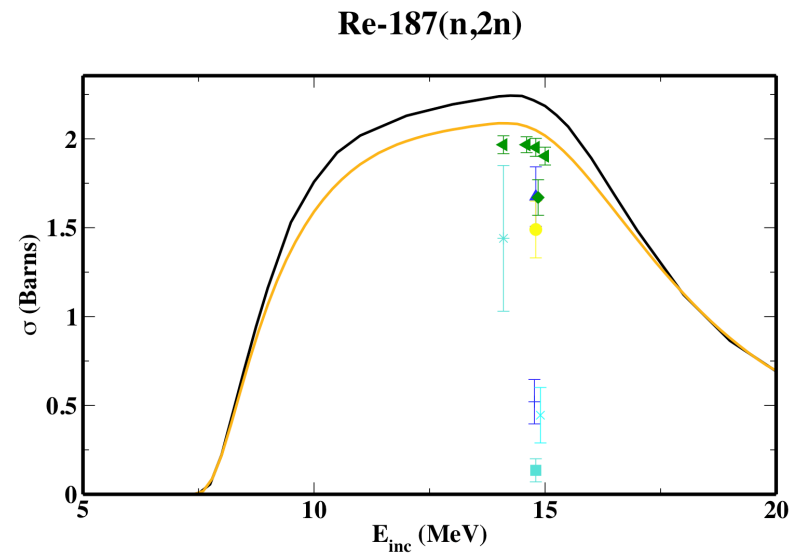
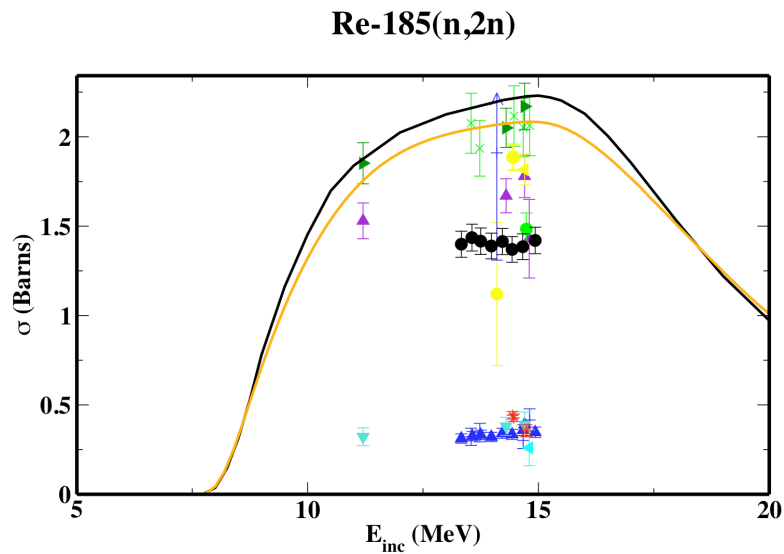


$\text{Xe-124}(n,2n)$



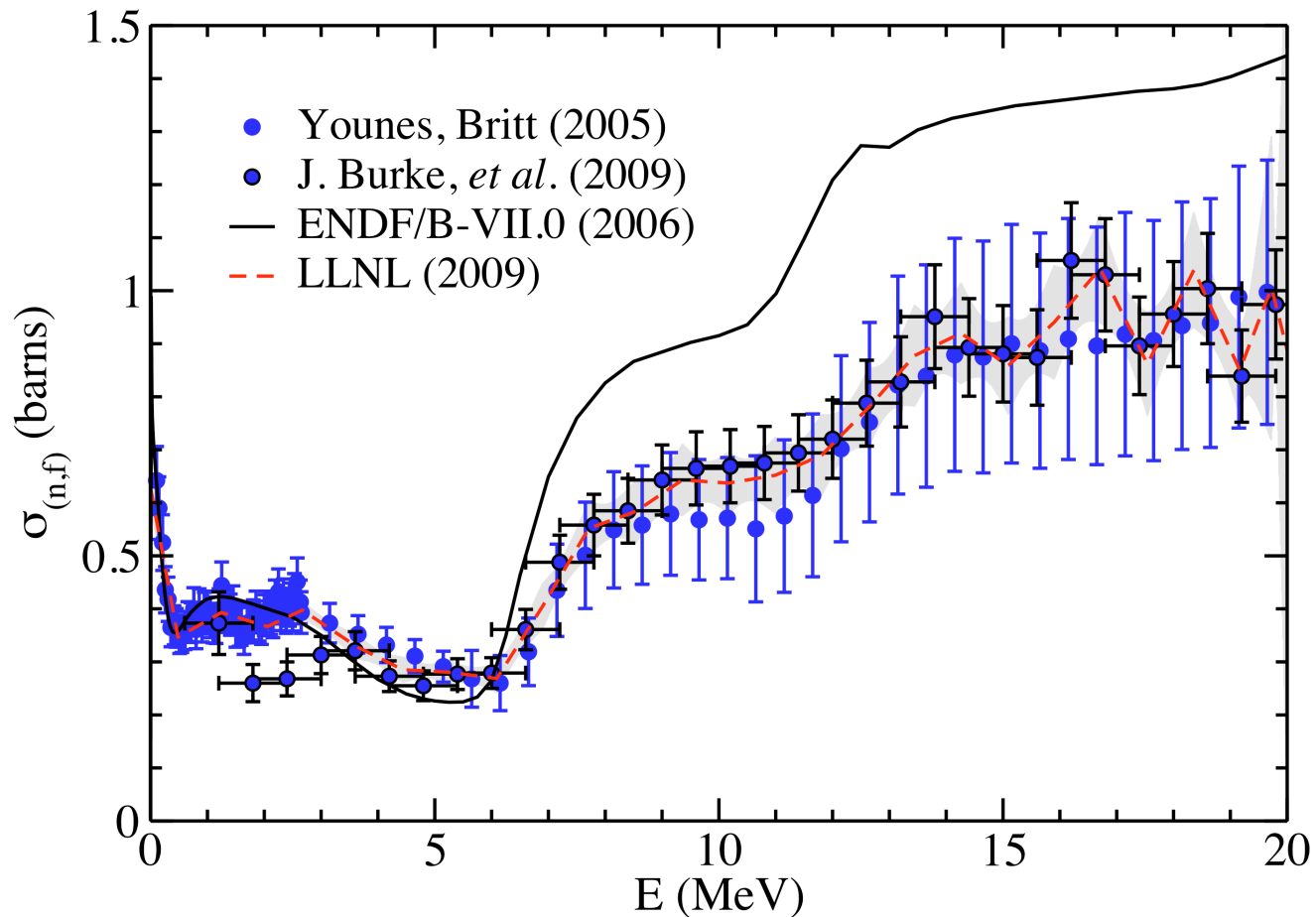
- $^{123}\text{Xe}$  (unstable): merge TENDL resonances
- $^{124}\text{Xe}$ : is new LLNL improvement over ENDF/B-VII.0

## ✓ 269: $^{185,187}\text{Re}$ submitted



- Small improvement in (n,2n)
- Other major channels largely the same

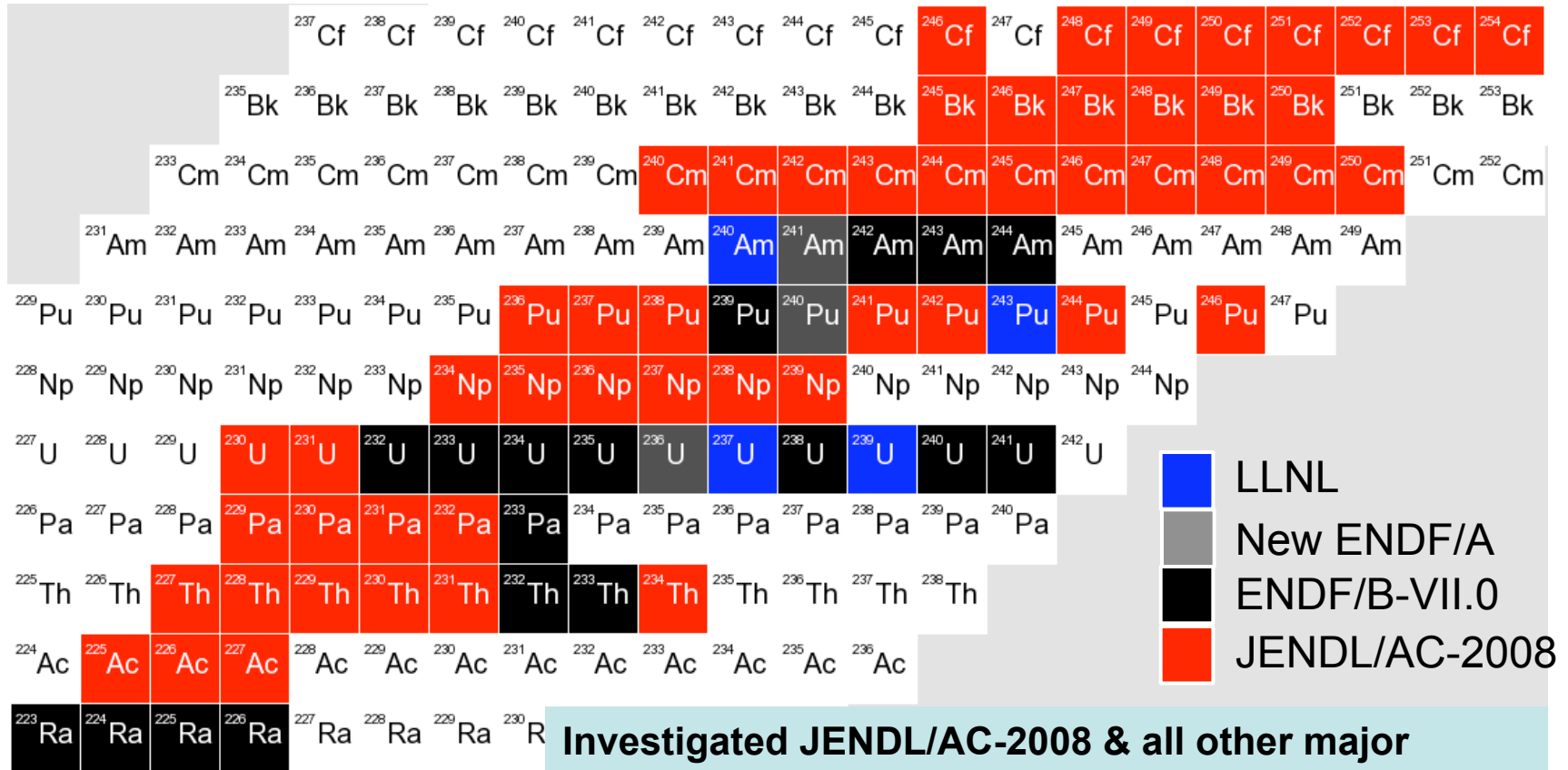
## ✓ 276: $^{239}\text{U}$ submitted



ENDF/B-VII.0  
evaluation  
erroneous:  
(n,f) cross  
section based  
on Younes &  
Britt surrogate  
data, but error  
was made

**Fit folds in uncertainties from three classes of surrogate  
measurements: (t, pf), ( $^3\text{He}$ , xf) and ( $^{18}\text{O}$ ,  $^{17}\text{O}$ )**

# ✓ 281: Minor Actinides in JENDL/AC

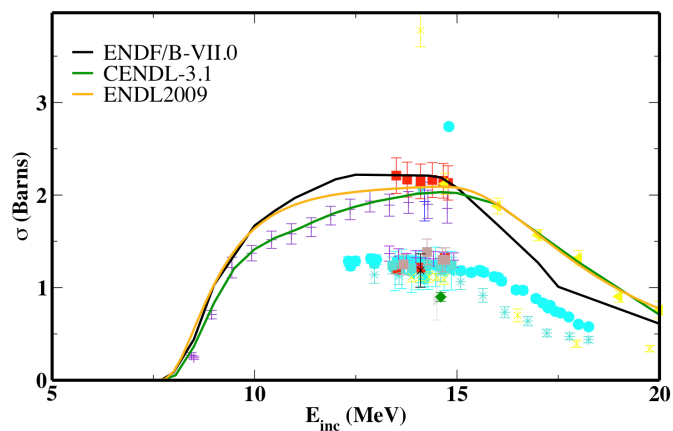


Technical report  
LLNL-TR-419387  
uploaded to GForge

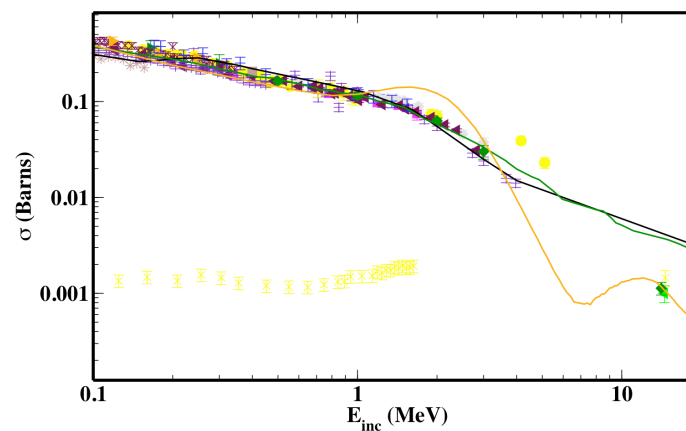
Investigated JENDL/AC-2008 & all other major libraries; made recommendations based on:  
Visual inspection of cross section plots  
 $\chi^2$  compared to cross section data  
Scope and quality of systematics when no data

□ 266:  $^{181}\text{Ta}$  evaluation by LLNL compared with experimental data [No action]

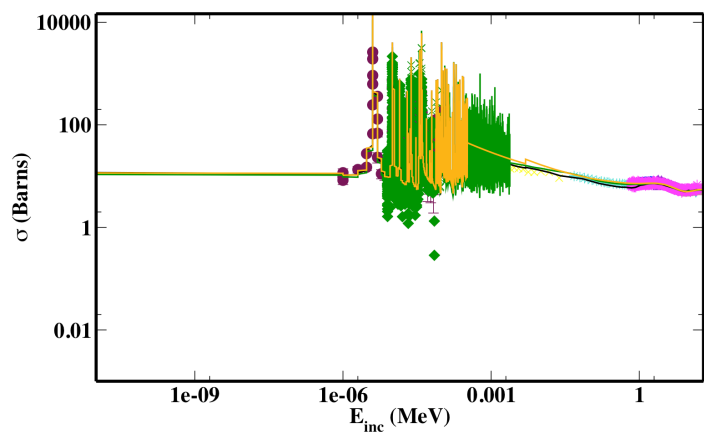
Ta-181(n,2n)



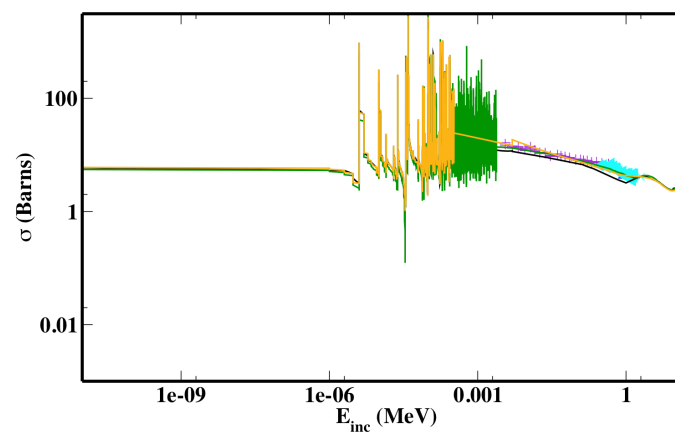
Ta-181(n,g)



Ta-181(n,tot)



Ta-181(n,el)



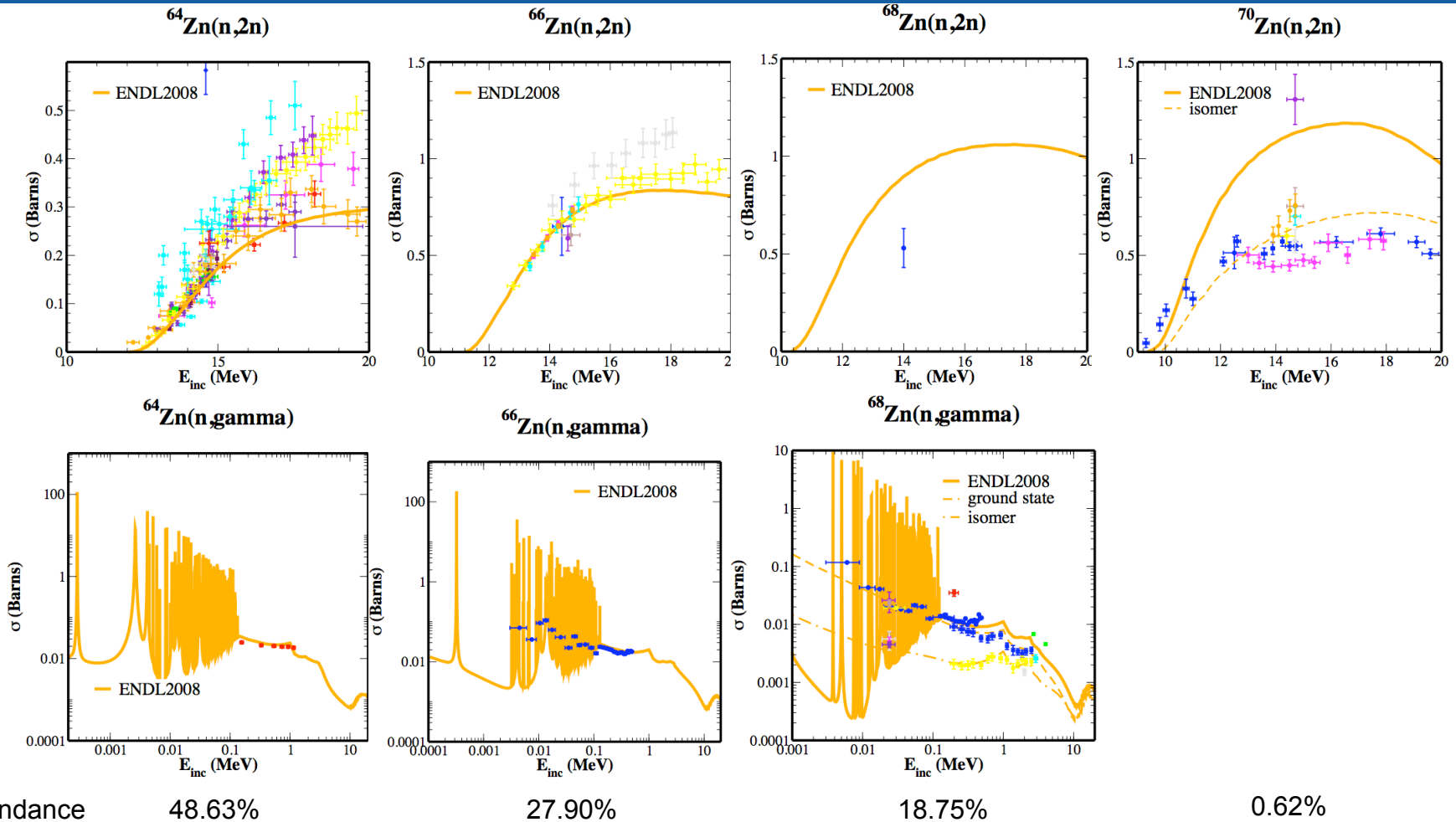


# CSEWG Actions

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- 246:  $^{19}\text{F}$  Remerge with ENDF/B-VII.0
  - LLNL to re-evaluate methodology for building libraries from EGAF data
  - $^{19}\text{F}$  evaluation should be ignored for ENDF/B-VII.1
- 267: W-isotopes: BNL, finalize these evaluations, and merge EGAF data if possible
  - LLNL re-evaluated EGAF data, producing new level schemes and primary gammas (almost complete)
  - Give to IAEA to rerun recent ENDF evaluations with new level schemes + primary gammas

# □ 257: Zn LLNL isotopic evaluations



## □ 257: Zn elemental compared to ENDF/B-VII.0

LLNL to finalize evaluations in Q4 FY10 - completed by Nov CSEWG

